

STUDIES OF THE BYRON BOG IN SOUTHWESTERN ONTARIO 50. ADDITIONAL OBSERVATIONS ON INSECTS IN THE BOG¹

W.W. Judd²

ABSTRACT: Various insects in Coleoptera, Diptera, Homoptera, Hymenoptera, Lepidoptera and Orthoptera were collected and observed in the Byron Bog since observations were begun there in 1956. Comments on their relationships to features of the bog are included. W.W. Judd, Department of Zoology, University of Western Ontario, London, Ontario, Canada.

DESCRIPTORS: Coleoptera, Diptera, Hymenoptera, Lepidoptera, Orthoptera of Byron Bog.

The Byron Bog at London, Ontario has been described by Judd (1957). There are three zones in it: the outer Zone C consisting of relatively dry, wooded slopes; the middle Zone B, damp or flooded throughout the year and including a heavy growth of trees and shrubs; the inner Zone A, a floating mat of *Sphagnum* moss with a central pond, Redmond's Pond. Since 1956 studies of various aspects of the bog have been carried out, including several on the population of insects in ponds and occurring on plants (Judd, 1958b, 1960, 1961, 1962, 1966a, 1966b, 1969, 1973). During the course of these studies collections of and observations on insects have been made, unrelated to particular projects. The present paper includes an account of these insects.

Most of the insects were identified by members of the Biosystematics Research Institute, Agriculture Canada, Ottawa: J.R. Barron (*Therion* sp.), H.E. Bisdee (*Banchus* sp.), K.B. Bolte (Geometridae), J.M. Campbell (Coleoptera), Bruce Cooper (Bombyliidae, Tabanidae), K.G.A. Hamilton (Homoptera), M. Ivanochko (other Hymenoptera), J.F. McAlpine (Anthomyiidae), A. Sauve (*Vespula*), J.R. Vockeroth (Syrphidae) and D.M. Wood (Tachinidae). Other insects were identified by the writer. All insects that were collected are deposited in the collection of the Department of Zoology, University of Western Ontario except some noted as "kept" in the National Collection, Ottawa.

¹ Accepted for publication: November 19, 1974.

² Department of Zoology, University of Western Ontario, London, Ontario, Canada.

Insects associated with flowering bog laurel, *Kalmia polifolia* Wang.

The bog laurel, *Kalmia polifolia*, is present on the bog as scattered shrubs growing above the *Sphagnum* mat in Zone A. In 1956 its period of blooming extended from June 1 to June 20 with maximum bloom on June 7 (Judd, 1958a). In 1969 it was determined to study the insects associated with the flowers of this plant. On two days, May 23, 28, when the plants were in full bloom and the temperature between 70° and 85°F. and the sky either clear or with scattered cumulus clouds, insects were collected from the flowers from 1:30 to 3:30 p.m.

Coleoptera: Nitidulidae

Brachypterolus pulicarius (L.) — 1 beetle. Beetles of this genus are often found on flowers in wet areas and marshes (Chagnon and Robert, 1962).

Diptera: Anthomyiidae

Hydrophoria laticornis (Ringdahl) — 1 fly (kept). — This species is widely distributed across northern North America (Stone *et al.*, 1965).

Tachinidae

Siphona intrudens (Curran) — 1 fly. This species has been reported from Ontario (Stone *et al.*, 1965).

Hymenoptera: Formicidae

Dolichoderus taschenbergi (Mayr) — 1 ant (kept). This species has been reported from Ontario (Muesebeck *et al.*, 1951).

Formica fusca L. — 8 ants (2 kept). This species was found on flowers of boneset, *Eupatorium perfoliatum* L., in the bog (Judd, 1969).

Halictidae

Halictus confusus Sm. — 1 bee. This species was found on flowers of boneset in the bog (Judd, 1969).

Dialictus inconspicuus (Sm.) — 1 bee. This species occurs in eastern North America (Muesebeck *et al.*, 1951).

Apidae

Bombus bimaculatus Cress. — 3 bees. This species was found on flowers of leatherleaf and blueberry in the bog (Judd, 1966a, b).

All the insects collected from the bog laurel were dusted with pollen or were moving about in the corollas of the flowers and thus were active or potential pollinators.

Other insects in the bog
Orthoptera: Mantidae

Mantis religiosa L. — One male, green phase, was collected from a shrub of leatherleaf on September 7, 1964. This species was first recorded from London in 1950 (Judd, 1953).

Homoptera: Delphacidae

Macrotomella carinata VanD. — 8 nymphs. These were collected from a swarm of these insects on leaves of water-lily, *Nuphar advena* (Ait.), at the edge of Redmond's Pond on September 29, 1968.

Lepidoptera: Geometridae

Alsophila pometaria Harris — Several Fal; Cankerworms were in flight among the trees in Zones B and C on November 8, 1964.

Rheumaptera hastata L. — 1 moth (kept), June 1, 1964. This species, the Spear-mark, is widely distributed through northern North America (Holland, 1916).

Euchoeca albobittata Guen. — 1 moth in flight about low vegetation, August 5, 1969. This species, the White-striped Black, is widely distributed in North America (Holland, 1916).

Phigelia titea Cramer — 1 moth (kept), June 5, 1964. This species occurs in eastern North America (Holland, 1916).

Saturniidae

Callosamia promethea Drury — A cocoon of the Promethea moth was collected from a shrub of Alder-buckthorn, *Rhamnus frangula* L., on February 3, 1962 and yielded a male moth on April 30.

Aegeriidae

Synanthedon acerni Clemens — A male and a female, *in copulo*, were collected on June 6, 1964. A likely host of this moth, the Maple-borer, in the bog is Silver Maple which grows in Zone C (Judd, 1957).

Nymphalidae

Boloria toddi Holland — One butterfly caught in flight over leatherleaf bushes, May 22, 1965.

Nymphalis antiopa L. — Mourning Cloaks hibernate in the bog and regularly appear early in the spring in sunny clearings in Zones B and C: April 7, 1962; April 27, 1963; May 5, 15, 1966; April 2, 5, 1967; March 28, 29, April 17, 1968; April 12, 1969; April 13, 29, 1970; April 19, 1971; April 12, 1972. The butterfly seen on April 13, 1970 was feeding on sap exuding from a cut in the bark of a Silver Maple. Sightings later in the year were made on September 16, 1964 and October 1, 1967.

Nymphalis milberti Latreille — Milbert's Tortoise-shells hibernate in the bog and appear in the spring in sunny clearings: April 2, 1967; April 6, 1974. Some were feeding at flowers on October 1, 1967.

Vanessa atalanta L. — Red Admirals were found in flight on May 10, 1964 and some were feeding at flowers of leatherleaf on April 17, 1968. They were found previously, in May, 1964, feeding at flowers of leatherleaf (Judd, 1966a).

Vanessa virginiensis Drury — American Painted Ladies were seen in flight in Zone A on May 10, 1964 and May 9, 1965.

Polygonia interrogationis Fabr. — Question Marks were feeding at flowers in the outer part of Zone C on October 1, 1967.

Polygonia comma Harris — The Comma hibernates in the bog and appears in spring in sunny clearings in Zones B and C: April 5, 16, 1967; March 29, 1968; April 3, 1970; April 19, 1971; April 12, 1972. They settled among dead leaves beneath the trees and at intervals would fly up in pairs among the branches. When a Mourning Cloak flew across a clearing a Comma would commonly dash at it and whirl about it in rapid flight.

Danaidae

Danaus plexippus L. — One Monarch was settling on leatherleaf bushes in Zone A on October 3, 1974.

Lycaenidae

Lycaenopsis argiolus pseudargiolus B. and L. — Spring Azures were in flight in spring around the bases of larch and black spruce trees and over leatherleaf bushes in Zone A: April 29, 1962; May 5, 1964; May 9, 1965; May 5, 15, 1966; April 17, 1968; April 30, 1974. They were found feeding at flowers of leatherleaf in May, 1964 (Judd, 1966a).

Everes comyntas Godart — One Tailed Blue was caught when in flight on June 1, 1964.

Incisalia augustinus Westwood — Brown Elfins were in flight in spring over leatherleaf bushes in Zone A: April 27, 1963; May 5, 1964; May 9, 1965; May 15, 1966. They were found previously in flight over leatherleaf in May, 1956 (Judd, 1960) and feeding at leatherleaf flowers in May, 1964 (Judd, 1966a).

Lycaena epixanthe michiganensis Raw. — Bog Coppers were in flight over bushes of leatherleaf in summer: July 2, 1962; July 18, 1967; July 6, 1968. They were previously found in July, 1956 over leatherleaf (Judd, 1960).

Pieridae

Pieris rapae L. — Cabbage Whites were in flight in the bog in spring: April 27, 1963; May 9, 1965. They have been found feeding at flowers of leatherleaf (Judd, 1966a) and boneset (Judd, 1969).

Hesperiidae

Thymelicus lineola Ochsenheimer – European Skippers were in flight around the bog on July 9, 1968. This skipper was found for the first time in North America at London in 1910 (Saunders, 1916).

Erynnis lucilius (S. and B.) – One Columbine Dusky Wing was caught when settling on dry earth at the outer edge of Zone C on May 27, 1965.

Diptera: Tabanidae

Atylotus thoracicus (Hine) – One fly was collected on August 13, 1967. This species was trapped previously in August, 1956 in the bog (Judd, 1958b).

Bombyliidae

Villa lateralis (Say) – 4 flies, August 13, 1967. These were found settling on bushes of leatherleaf in Zone A. This species is widely distributed in North America (Stone *et al.*, 1965).

Syrphidae

Metasyrphus americanus (Wied.) – 2 flies, October 31, November 3, 1956.

Eristalis tenax (L.) – 1 fly, October 25, 1956.

These flies were trapped in a baited trap set out on the bog in 1956 (Judd, 1957).

Hymenoptera: Ichneumonidae

Banchus sp. – 4 wasps, May 11, 14, 20, 1964

Therion sp. – 4 wasps, September 9, 1964

These wasps were found flying among branches of leatherleaf. Wasps of these genera are parasites of various caterpillars (Muesebeck *et al.*, 1951).

Vespidae

Dolichovespula maculata (L.) – This wasp was trapped in a baited trap set out on the bog in Zone A in 1956 (Judd, 1962) and occurred from June to October. In later years hibernating females were looked for under shelters in Zone B. Two were found under logs on September 29 and November 3, 1968. One, found on December 3, 1970, had excavated a circular cavity one inch in diameter on the lower surface of a log and was curled up in it. On December 5, 1970 it was decided to find as many as possible hibernating females beneath logs turned over in the full circuit of Zone B and six were found.

Vespula arenaria (Fabr.) – One female was found beneath a log on December 5, 1970. This wasp was previously found in August, 1956 in a baited trap on the bog (Judd, 1962).

Sphecidae

Priononyx atratus (Lep.) — One female wasp was found on flowers of goldenrod at the outer edge of Zone C on September 17, 1964. This species was found on boneset in 1967 (Judd, 1969).

LITERATURE CITED

- Chagnon, G. and A. Robert. 1962. Principaux coleopteres de la Province de Quebec. Les Presses de L'Universite de Montreal, Montreal. 440 pp.
- Holland, W.J. 1916. The Moth Book. Doubleday, Page and Co., New York. 479 pp.
- Judd, W.W. 1953. The European praying mantis, *Mantis religiosa* L., at London, Ontario. Can. Field-Naturalist, 67(4): 182.
- Judd, W.W. 1957. Studies of the Byron Bog in southwestern Ontario I. Description of the bog. Canadian Ent., 89(5): 235-238.
- Judd, W.W. 1958a. Studies of the Byron Bog in southwestern Ontario II. The succession and duration of blooming of plants. Can. Field-Naturalist, 72(3): 119-121.
- Judd, W.W. 1958b. Studies of the Byron Bog in southwestern Ontario V. Seasonal distribution of horseflies and deerflies (Tabanidae). Canadian Ent., 90(4): 255-256.
- Judd, W.W. 1960. Studies of the Byron Bog in southwestern Ontario. XI. Seasonal distribution of adult insects in the *Chamaedaphnetum calyculatae* association. Canadian Ent., 92(4): 241-251.
- Judd, W.W. 1961. Studies of the Byron Bog in southwestern Ontario. XII. A study of the population of insects emerging as adults from Redmond's Pond in 1957. Amer. Midland Naturalist, 65(1): 89-100.
- Judd, W.W. 1962. Studies of the Byron Bog in southwestern Ontario. XIII. Seasonal distribution of wasps (Hymenoptera: Vespidae). Entomol. News, 73(3): 79-81.
- Judd, W.W. 1966a. Studies of the Byron Bog in southwestern Ontario. XXIII. Insects associated with flowering leatherleaf, *Chamaedaphne calyculata* (L.) Moench. Trans. Amer. Microscopical Soc., 85(2): 302-305.
- Judd, W.W. 1966b. Studies of the Byron Bog in southwestern Ontario. XXVII. Insects associated with flowering blueberry, *Vaccinium atrococcum* (Gray) Heller. Can. Field-Naturalist, 80(4): 242-244.
- Judd, W.W. 1969. Studies of the Byron Bog in southwestern Ontario. XXXVIII. Insects associated with flowering boneset, *Eupatorium perfoliatum* L. Proceedings, Entomol. Soc. Ontario (1968), 99: 65-69.
- Judd, W.W. 1973. Studies of the Byron Bog in southwestern Ontario. XLIX. Additional observations on the insects of Redmond's Pond. Entomol. News, 84(3): 96-98.
- Muesebeck, C.F.W., K.V. Krombein and H.K. Townes. 1951. Hymenoptera of North America north of Mexico — synoptic catalog. United States Dept. Agric., Agric. Monograph No. 2. 1420 pp.
- Saunders, W.E. 1916. European butterfly found at London, Ont. Ottawa Naturalist, 30: 116.
- Stone, A. et al 1965. A catalogue of the Diptera of America north of Mexico. United States Dept. Agric., Agric. Research Service. 1696 pp.